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The Commercial VEGETABLE GROWER

TRADE MARK

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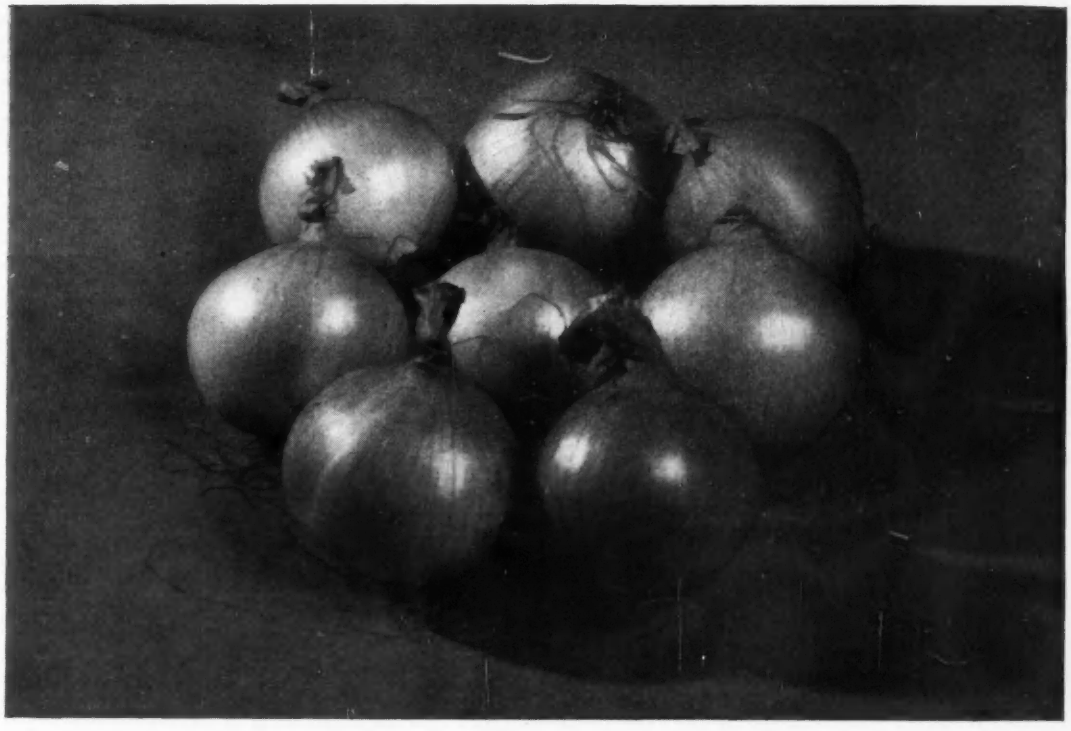
POTATO—ONION—Market Reports

Vol. I— No. 2 *The Commercial Vegetable Growers National Service Magazine* February, 1953



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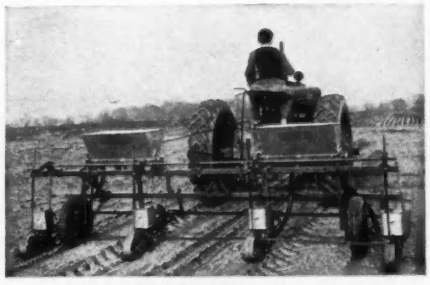

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FEATURE

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FEATURED IN THIS ISSUE

Fertilizer And Vegetables

A comprehensive forecast of fertilizer supply and vegetable fertilization. By Dr. John R. Taylor, Jr., American Plant Food Council.

Portable Sprinkler Irrigation

You can't afford to farm without it; Systems pay for themselves and for the extra work needed to operate them. By Dr. Arthur J. Pratt, New York State College of Agriculture, Ithaca, N. Y.

DEPARTMENTS

Vegetable Crop Report

The Vegetable Situation

Technical Briefs

Market Report—Potato & Onions

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WHERE DO WE GO FROM HERE?

(An Editorial)

By DR. M. P. RASMUSSEN, Consulting Editor,
Professor of Marketing, College of Agriculture,
Cornell University

THIS is the time of the year when folks take stock of things and try to pierce the veil of the near future as best they can. From the welter of guesstimates currently being made by economists, government as well as private, it seems reasonable to assume that fruit and vegetable growers may expect a continued high level of employment and of family purchasing power during 1953. Consumers will, therefore, probably be able to pay for a wide variety of fresh, frozen, and canned fruits and vegetables, if their desires for them can be stimulated by proper merchandising procedures. The $64 question for fruit and vegetable growers is, therefore, how to induce consumers to use maximum quantities of fruits and vegetables and how each grower can get the greatest possible net return for himself. There are a number of ways which will help bring about this desirable end result—none of them easy—but if every grower, shipper, wholesaler, and retailer in the produce business does **his** bit (and that is probably the only way it **can** be done), much can be accomplished.

Knowledge of Food is Not Automatic

One of the most promising ways to obtain maximum consumption of fruits and vegetables is to tell the consumer over and over and over again how good, nutritious, and wholesome fruits and vegetables are. It has been said that modern education consists of knowing less and less about more and more. There is a certain elemental truth in this statement which applies strikingly to the produce business. Growers and shippers who handle vegetables and fruits daily have great difficulty in understanding that city dwellers are not thoroughly familiar with their products.

Back in 1800, 94 of each 100 persons lived on farms and only 6 lived in cities and villages. Most people then raised their own food and so they knew what varities were good and which were not so good. They knew almost to the day when the season started and finished for each kind of fruit and vegetable in the market. Furthermore, the number of fruits and vegetables available for consumption in those days was quite small and largely limited to hardy, long keeping varieties.

Contrast this manner of living with that of the present. Today 85 of each 100 persons are living in cities and villages where they have only the most meager opportunities for learning the names or uses of the different kinds and varieties of fruits and vegetables, and are almost entirely ignorant as to when the season of each begins and ends, or of what can reasonably be expected in the way of quality. In most well stocked food stores today, city dwellers are confronted daily with a bewildering array of 40 to 50 different fruits and vegetables drawn from many States in the Union and from foreign countries. It seems rather clear that something better than current marketing practices must be developed throughout the Nation if fresh fruits and vegetables are to get their full share of the consumer's dollar. Not only must "Mrs. America" be told over and over and over again that a certain fruit or vegetable is now in season and in the market, but she must be told what it is good for, how to recognize it, and how to use it. This is a job on which each member of the industry can really go to work, with fair assurance that the rewards will be satisfactory.

Let's Capitalize on Our Advantages

In this day and age when practically every magazine and newspaper devotes column after column to "slimming diets" and cures for obesity, it is hard to understand why the fruit and vegetable business has failed to take advantage of the fact that most fresh fruits and vegetables are

(Continued on Page 17)

THE *Vegetable* SITUATION

JANUARY 30, 1953

CREATION OF A COOPERATIVE FLOOD CONTROL ORGANIZATION, supported by federal, state and county governments was proposed by Four States Irrigation Council at Colorado A & M College, Jan. 14 and 15.

45 PERCENT OF POTATOES PRODUCED BY 5078 FARMS, according to Bureau of Census. One farm out of every three produces some potatoes, but less than one percent of those potato-producing farms produced almost two-thirds of the crop.

FARM LABOR AND FERTILIZER COSTS lead the list of items that probably increase farming costs in 1953.

GOVERNMENT SUPPORT FOR FARM PRICES are counted on to maintain farm buying power. Such programs seemed to have worked smoothly when industrial employment was high and urban populations could pay the higher prices for foods. At a low level of employment, conditions, of course, would not be so favorable for sustaining farm incomes, because less farm produce would be sold. The farm program's objective is not necessarily to keep up the farmer's dollar income but to maintain his buying power for industrial products. If the latter declined in prices, parity programs would permit a decline also in farmers' prices.

AUTHORITIES NOW ESTIMATE THERE WILL BE 35,000,000 more persons to feed in the U. S. by 1975.

COMMERCIAL PRODUCTION OF 27 VEGETABLE CROPS FOR FRESH MARKET was 9.4 million tons, or 1 percent more than 9.3 million tons for 1951. This total included quantities not marketed because of low prices or other economic factors, however, quantities not marketed were comparatively small in both 1951 and 1952. The total value of the 27 vegetable crops is 836 million dollars or 12 percent more than the 749 million dollars for 1951. This value is the price received by growers, although they should not be confused with estimates of cash receipts or calendar-year income from these crops. Compared with 1951, the 1952 production for winter season (January-March) showed an increase of 8 percent; for spring, no change; summer, a reduction of 2 percent; for fall, an increase of 4 percent.

AGGREGATE 1952 PRODUCTION OF 11 VEGETABLES FOR PROCESSING, including crops for canning, freezing, pickling and other processing, exclusive of dehydration was 6,549,200 tons, which was 9 percent less than the 1951 production of 7,215,100 tons, but was 20 percent above the 1941-50 average production. The 1952 harvested acreage of these 11 vegetables for processing totaled 1,807,050 acres compared with 1,867,990 acres harvested in 1951. The 1952 value of the 11 crops was $273,427,000; which was 12 percent lower than the 1951 value of $309,646,000.

WE HAVE ENTERED THE NEW YEAR AMID AN AIR OF OPTIMISM. Forecasts by Government and business economists are almost all in agreement regarding the favorable business outlook for the first half of 1953. In the food industry, leaders believe more money will be spent for food because of the high level of expendable income and employment.

AN ESTIMATED WEIGHT OF 85 POUNDS PER CRATE became official January 20th on shipments of cabbage.

U. S. SUPREME COURT RULING upholding the right of Interstate Commerce Commission to bring "trip-leasing" of motor vehicle equipment under its rules governing interstate movements of contracts and common carriers, hit a hard blow on the vegetable industry, and other shippers of agricultural commodities. However, it is too early to gage the economic effect this ruling will have on growers and shippers.

USDA PROPOSES STANDARDS AND GRADES FOR COLLARD AND BROCCOLI GREENS as a means of aiding the packing and sale of these products. Standards for these products have been requested by growers and shippers in Florida, Texas and other southern states.

Under the proposal, a single grade (U. S. No. 1) would be set up for collard or broccoli greens. The proposal also would designate as "unclassified" the collard and broccoli greens which have not been classified in accordance with the proposed U. S. No. 1 grade.

Vegetable Crop Report

CARROTS: 1953 winter carrots are expected to be in larger supply than in 1952. The 11,450,000 bushels indicated is 12 percent above the 10,207,000 for 1952. Prospective production is above both last year and average in all three of the remaining winter crop States—Arizona, Texas and California. Good quality carrots are available in all irrigated areas of Texas. Lower Valley somewhat lighter than usual, due to shortage of irrigation water earlier. Latter November rains were beneficial to Valley acreage. Crop in Winter Garden area is in good condition. Small acreage for late harvest in Coastal Bend. California prospects are considered good to excellent. Desert Areas harvest was small in December, volume level will not be reached until March unless winter is mild.

CAULIFLOWER: Prospects for 1953 production of these winter crop States is 1,045,000 crates. This is 2 percent under the 1,064,000 crates for 1952, but 19 percent above the average of 877,000 crates. Texas, the increase in acreage compared with 1952, is practically all in the Winter Garden area, where most of the crop is being shipped in mixed cars or by truck. Plantings in the Valley were somewhat under those of a year ago and later than usual. Florida plantings made after mid-October are generally in fair to good condition. Harvesting became general in late January.

CELERY: Indicated 1953 production of winter celery in California, Florida and Arizona is 7,259,000 crates, 2 percent less than the 7,424,000 crates for 1952. California crop is generally in excellent condition in all areas except Los Angeles, and Orange counties. Smog during September and October retarded development of crop, but no permanent injury is expected. San Diego shipping area not affected. Everglades general harvest was in late December. Sarasota harvest started in early January. Sanford-Oviedo harvest became active in mid-January.

LETTUCE: Prospective 1953 production is 11,622,000 crates, 10 percent above the 10,609,000 crates for 1952. Both in Texas and Florida the 1953 acreage is larger than indicated by reports a month ago. Hot weather in Arizona during the fall caused early maturity of the crop. Considerable acreage in the Imperial Valley reached maturity early in December. Cool weather in November slowed the too rapid development of the Imperial crop, preventing bolting and improving quality. High fall temperature caused low yields and early fields showed seeders at Blythe. Mid-season and late fields were not damaged as extensively by heat. Yields increased and quality improved during December. Cool weather in Texas improved quality and yields.

GREEN BEANS: The prospective 1953 winter production of green peas is 90,000 bushels compared with 78,000 bushels in 1952. Texas, the only remaining winter crop State, planting was later than usual and very little production is expected until late January and early February. Practically all of the Texas acreage is in the east end of the Lower Valley.

LIMA BEANS: 1953 winter crop prospect in Florida is 48,000 bushels, which is 11 percent below 1952 winter production of 54,000 bushels. Reduced acreage accounts for the smaller prospective supplies. Yield per acre prospects improved during November in the Pompano-Delray section. Light harvest started the middle of November with general harvest the first of December.

CABBAGE: 1953 production in the four winter crop States is expected to total 352,300 tons. Such a crop would be 13 percent more than in 1952. Prospective yields per acre are below 1952 in all four States, but above average in all except Texas. Texas acreage for harvest, due to low water supply, is below that indicated by earlier intentions to plant reports. Valley supplies were available much earlier than usual, production came from acreage irrigated from private wells. Crops in other irrigated regions of Texas-Loredo, Winter Garden and Eagle Pass—are in good condition. Improved moisture situation in Coastal Bend is expected to result in small acreage being planted for late March and April harvest. Florida peak production in all sections of State was due mid-January. Most of Everglades early plantings were lost in October rains. Harvest in Imperial Valley, California began about mid-December. Six early-spring crop States, intentions to plant, indicate 19,400 acres for 1953, 24 percent above the 1952 acreage. The prospective 1953 acreage is about that for 1952 in all of these States except California and below average in all except South Carolina.

SPINACH: Winter crop production prospects show slight increase over those of November 1st. California, Texas and South Carolina crops remain at the November level, Mississippi yields are turning out better than expected. Indicated production 4,087,000 bushels. 5 percent below 1953 winters crop of 4,321,000 bushels. South Carolina crop above average yields. Drought in Mississippi delayed early production. Texas, supplies, entirely from irrigated sections of the Winter Garden and Eagle Pass. Shipments about 1-half those to the same date last year. Production in Coastal Bend and Raymondville areas began early January.

GREEN PEPPERS: Production indicated for winter harvest in Florida is 1,540,000 bushels. 4 percent below last year average. Rains stunted early acreage yield, prospects are poor to fair. Acreage seeded after mid-October generally shows fair to good prospects. Acreage will come into production in February.

CUCUMBERS: Florida's winter crop prospective production is 312,000 bushels, 26 percent above last winter harvest of 248,000 bushels. Yields per acre expected to run well below 1952 yield. Acreage reported for harvest is 56 percent larger than last winter's harvested acreage. Plantings of 2,700 acres were made for this winter's crop but 200 acres were lost because of low temperatures and winds. Plantings in 1952 were reported to be 2,200 acres of which 1,600 acres were harvested. Acreage for harvest during January and February were damaged by low temperature. Greatest in Fort Myers-Immokalee area, small plantings in the Pompano, Dade County and Ft. Pierce sections.

BROCCOLI: Winter crop areas of Arizona, South Carolina and Texas is expected to total 73,000 crates (42 lb.), 15 percent less than the 859,000 crates in 1952. Texas, which produces about four-fifths of the winter crop early plantings in the Lower Valley were a little smaller than usual, but this area has a fair-sized acreage for harvest later in the season.

Fertilizer factories operating at full speed throughout the United States, setting new production records for 14 consecutive years to furnish the plant food needs of commercial vegetable growers.

Fertilizers And Vegetables

WITH A GROWING POPULATION, MORE EMPHASIS WILL BE PLACED BY GROWERS ON MAXIMUM ECONOMICAL PRODUCTION

By DR. JOHN R. TAYLOR, JR., Agronomist
American Plant Food Council, Washington, D. C.

(This Article prepared especially for THE COMMERCIAL VEGETABLE GROWER)

COMMERCIAL vegetable growers play a vital role in helping to make the United States the best fed nation in the world.

Without our daily supply of fresh and processed vegetables, our diets would not only be reduced but would become very monotonous and uninteresting.

In growing the *quanity* and *quality* of vegetables demanded by housewives, commercial fertilizers likewise play an important role. Fertilizers not only help to increase yields but give quality to vegetables which means so much to both the producer and consumer.

With a growing population, the demand for vegetables will increase and to meet these demands, more and more emphasis will be placed by growers on maximum economical production. Since very little new land is available, this means higher production per acre. To do this will require the combination and use of all good land management practices of which the adequate and proper use of fertilizers will be a major factor.

Large quantities of commercial fertilizers are used on vegetable crops but more will be used in the future. In 1950, about 10.7 percent of the total nitrogen, 8 percent of the total phosphate and 10.6 percent of the total potash used in the United States was applied to fresh and processed vegetable crops. This does not include fertilizer for potatoes, dry beans and peas, or fruits. Since a total of 22 million tons of fertilizers were used last year, it can be seen that commercial vegetable growers are major users of fertilizers.

It is interesting to note that in 1950 nearly twice as much nitrogen was used on vegetable crops as was applied to the entire wheat crop in the United States. In fact, nitrogen usage on vegetables was exceeded only by the use on corn, cotton and fruits.

Also, about as much phosphate was used on vegetable crops in 1950 as was used on the entire oat

crop in the United States. Only on corn, pastures, hay and wheat were phosphate applications larger than on vegetables.

Only one crop, corn, used more potash in 1950 than did vegetables. In fact, about as much potash was applied to vegetables as was used on both the wheat and peanut crops combined.

According to a recent report by the Fertilizer Work Group of the National Soil and Fertilizer Research Committee, the current average use of fertilizers on vegetable crops is as follows: Nitrogen (N) — 44 lbs. per acre; Phosphate (P_2O_5) — 62 lbs. per acre; and Potash (K_2O) — 45 lbs. per acre. For comparison, the average use of nitrogen on corn in the United States is about 7 lbs. per acre, phosphate 11 lbs. and potash 7 lbs. Obviously, then, commercial vegetable growers recognize the importance of plant food in growing high yields of quality vegetables. The amounts used per acre on the various crops vary tremendously depending upon the crop, soil and climatic conditions.

Although a good job is being done in growing commercial vegetable crops, experiments in many areas show that we still have not reached maximum production per acre with all vegetable crops. In this connection, the results of a survey by the Department of Agricultural Economics at Cornell University are very interesting. The survey included 24 individual New York farms representing over 600 acres of canning factory tomatoes. These 24 growers were perhaps some of the best in the state because the average yields on the 24 farms was 18.6 tons of tomatoes per acre, while the state average is only 9.5 tons. These growers, however, used less nitrogen and potash than was recommended by the Agricultural Experiment Station, the average being about 33 lbs. less nitrogen and 41 lbs. less potash. The question arises, would these growers have produced more tomatoes had they used the recommended amounts of fertilizers? Evidently the answer was "yes" because the growers who used more than the recommended amount of nitrogen averaged 20.7 tons of tomatoes, an increase of 3.2 tons per acre, while similar results were obtained by adding larger amounts of phosphate and potash.

It seems evident that increased yields can be obtained on many farms and I should like to emphasize that to do this means combining all good management practices, of which the proper use of fertilizer is only one, but a very important one. Study the Experiment Station results in your area and apply the findings to the individual crops and soils on your farm.

Soil testing and tissue testing are excellent tools which can be used to advantage in growing vegetable crops. Many commercial growers have experienced technicians to do their own soil and tissue testing work. No doubt, this will expand in the future.

Fertilizer Supply Situation

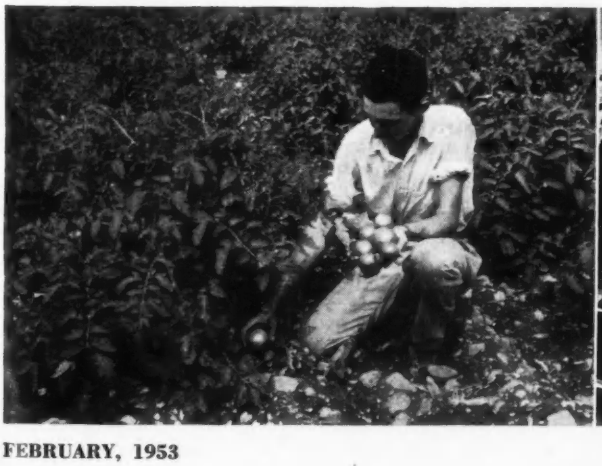
Since fertilizers are so important in vegetable production, what about the supply for next year and in the future.

Although record-breaking quantities of fertilizers have been produced annually since 1939, the demand has been greater than the supply. Official figures for last year are not yet available but estimates indicate total consumption at about 22 million tons—an increase of approximately one million tons or 5½ percent over the previous fertilizer year. This is about three times as much commercial fertilizer as was used in the pre-war 1935-39 era.

For the current year, ending June 30, 1953, estimates indicate an increase of from 10 to 15 percent over last year or a total of between 24 and 25 million tons. This is assuming, of course, that no strikes are encountered in the production field and no drastic changes occur in the international situation. For the first time in our history, fertilizer tonnage is beginning to approach the tons of liming material used on American farms.

In terms of the major plant

Tomatoes require large amounts of plant food for maximum yields.



Good, crisp nutritious vegetables for the market basket cannot be produced without plenty of plant food.

foods, the supply situation looks about as follows:

Potash—Rapid expansion and development has taken place in the domestic potash industry in the United States and record quantities of potash are being produced each year. Production last year, including both domestic and imports, resulted in a total of about 1,585,000 tons of K_2O for agricultural purposes. The outlook for this year is an increase of about 17 percent or a total of 1,850,000 tons K_2O. This is an increase of 265,000 tons over last year and will again set a new all-time high.

Nitrogen—Approximately 1,425,000 tons of nitrogen were used last year which represents an increase of about 11 percent over the previous year. For the current season, estimates point toward another increase of about 11 percent or a total of 1,585,000 tons of nitrogen. The expected increase this year of 160,000 tons alone is more nitrogen than was used in all the states of Ohio, Indiana, Illinois, Michigan and Wisconsin combined during the fertilizer year 1951. The following table shows the increase in nitrogen production since 1940:

Year	*Tons-Nitrogen (N)*
1939-40	419,000
1944-45	630,000
1949-50	1,005,000
1951-52	1,425,000
1952-53	1,585,000

Phosphate—Last year the fertilizer industry was faced with a shortage of sulfur which is essential in the production of phosphate fertilizer materials. The situation has eased somewhat this year and the outlook is for an increase of around 10 percent in the production of phosphate fertilizers. This means a total of 2,465,000 tons of P_2O_5 or an increase of 230,000 tons over last year. For the past several years, there has been an increased demand and an increased production of triple superphosphate and other concentrated phosphate materials. During the coming year, an even larger proportion of the phosphate fertilizers will be in the form of concentrated materials. These materials are used primarily in the manufacture of higher analysis complete fertilizers.

Higher Fertilizer Production Goals in the Future

With a rapidly growing population and a relatively stable acreage of land available for the production of food and fiber, still higher demands for commercial fertilizers are expected in the future. To meet these demands, rapid expansion is taking place in the fertilizer industry and definite production goals have been set for completion by 1955.

The goal for total nitrogen production in 1954-55, for agricultural purposes, has been set by the U. S. Department of Agriculture at 2,185,000 tons. The program has been authorized by the various defense agencies and it is expected that the goals will be met in full by the nitrogen producers. Construction of new plants and expansion at old plants is in various stages of completion. This new nitrogen production involves 25 new nitrogen plants scattered throughout the country with the major concentration of plants being in the lower Mississippi Valley region. Some of the increased nitrogen production will materialize during the current season and additional quantities next year, with the total program to be completed in 1954-55.

As soon as the nitrogen expansion program was well underway, attention was given to an expansion program for phosphate fertilizers. The goal for 1954-55 was set by the U. S. Department of Agriculture at 3,600,000 tons P_2O_5 with 3,485,000 tons for fertilizers. This program is not yet completed but it is evident that the goal for 1954-55 will be met. Some expansion is expected in the production of regular superphosphate. However, major expansion is expected in the production of triple superphosphate and other high analysis phosphate materials such as nitraphosphates. The new nitraphosphate plants will require less sulfur in the production of the phosphate materials.

The potash goal for 1954-55 has been set by the U. S. Department of Agriculture at 2,185,000 tons (K_2O) for agricultural purposes. Expansion in the domestic potash industry is and has been taking place at a rapid rate. Output has been increased at the older mines and new mines are just coming into production in the Carlsbad, New Mexico area. Thus, the domestic production of potash has made the United States virtually independent of foreign sources. However, it is expected that normal imports will supplement domestic production. The goals for 1954-55 potash production will be met on time.

Many new developments are taking place in the fertilizer industry and history will probably record that a major revolution in the fertilizer industry took place in the 1950-1960 decade. Higher analysis fertilizers are being used and new methods of production and application are rapidly taking shape. As in the past, the fertilizer industry is combining scientific research, new developments and practical experience so as to supply commercial vegetable growers and other farmers with the kinds and amounts of fertilizers which they need for their crops.

Irish Potato Hollow Heart Not A Disease—Caused By Rapid Growth

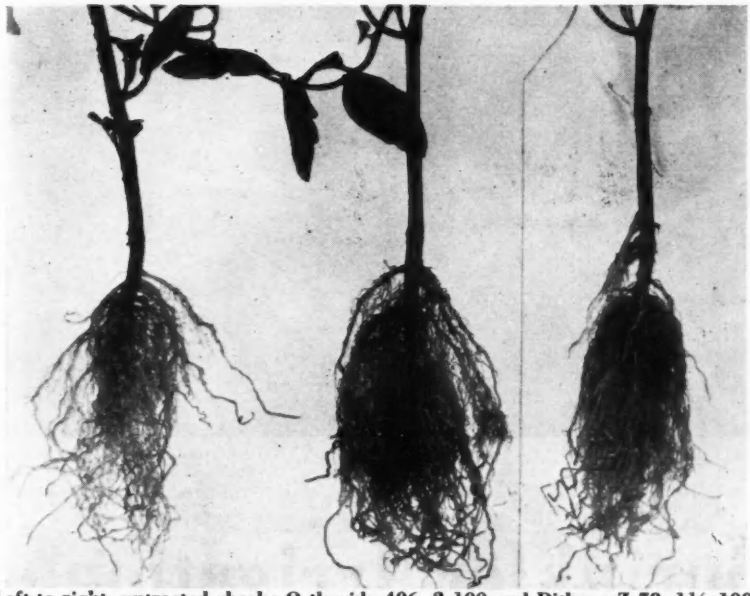
That large open space on the potato with an occasional brownish corky tissue surrounding it is not a disease. It is a condition known as hollow heart. In spite of its apparent harmless attitude, however, this hollow heart condition is causing serious damage to potatoes in Louisiana and other states as well.

Hollow heart causes a more or less irregular cavity in the center of the tuber. Sometimes a grayish growth will be present and the surrounding tissue will also be brownish or dark in color.

Large potatoes will be affected more seriously than the smaller sizes. Hollow heart is a result of rapid growth and is sometimes caused by the use of too much nitrogen as fertilizer, or when temperatures, rainfall or other conditions are ideal for rapid growth.

Root-Dip Treatment Improves Tomato Plant Development

By Michael Szkolnik, N. Y. Agri. Exp. Sta., Geneva



Left to right, untreated check; Orthocide 406, 2-100 and Dithane Z-78, 1½-100. Photographed 34 days after treatment.

RECENT experimentation was conducted on John Baer tomatoes using several chemicals at two concentrations as root dips. (See table.) Ten greenhouse plants grown in soil were used for each root-dip treatment and 10 non-dipped plants were carried through as checks. The somewhat sparse roots were washed free of soil, immersed in various chemical formulations, which were kept stirred, for 1½ minutes, and immediately potted in white sand on February 4, 1952. All groups received the same daily application of water and a complete nutrient solution.

On March 6, 34 days after root treatment and planting, measurements were made of plant height and green weights of roots and tops were recorded. Dry weights of roots and tops were taken March 19. The data are presented in the table. The effects of the treatment on the roots are shown in the illustration.

The table shows that tomato plants dipped in Orthocide 2-100 and in Dithane Z-78 (65 per cent zinc ethylene bisdithiocarbonate) 1½-100, prior to repotting in sand produced significantly more root and top growth than did the untreated check plants. The Orthocide treatment was superior to all treatments in this experiment.

What Causes Stimulation?

The mode of stimulating plant growth is uncertain. The fungicidal effect of the treatments on disease organisms in the root zone can be discounted because the disease factor in the clean sand employed in this experiment was of little, if any, importance.

The possibility of direct nutritional value can probably be minimized as the check plants received the same daily applications of a complete nutrient solution as the treated plants. Also, plants did not exhibit responses which occur following treatment with known plant hormones.

It seems that the active principle or by-products of the break-down of Orthocide and Dithane Z-78 may actually provide the plant with certain intermediate products useful in its biochemical activities. The theory of chemical breakdown in the sand is supported by the fact that the chemicals are obviously taken up by the roots even though they are insoluble in water. The active components or breakdown products of the chemicals induce production of a greater root mass and it is believed that the greater top growth is largely the result of a larger root mass capable of

(Continued on Page 16)

Growth of John Baer tomato plants potted in sand following root dip treatments*

Root dip treatment	Height in inches†	Weight in grams‡ Roots		Tops	
		Wet	Dry	Wet	Dry
Orthocide 406:2-100	10.5	143.8	9.4	299.0	23.8
Orthocide 406:4-100	9.0	65.4	4.8	116.5	10-6
Dithane Z-78:1½-100	9.3	105.6	7.4	159.5	17.4
Dithane Z-78:3-100	8.6	69.6	5.6	116.0	11.7
Phygon XL:½-100	8.5	66.7	6.2	99.0	11.1
Phygon XL:1-100	8.3	46.9	4.0	78.0	9.4
COCS:2-100	7.9	63.9	5.0	90.5	8.4
COCS:4-100	7.3	23.2	2.4	44.9	5.3
Checks	9.2	62.2	5.3	114.5	11.8

*Plants treated and potted February 4, 1952. Measurements and weights made March 6.

†Average of 10 plants.

‡Total weight of 10 plants in each group.

Photo from Aluminum Co. of America

Portable Sprinkler Irrigation

YOU CAN'T AFFORD TO FARM WITHOUT IT; SYSTEMS PAY FOR THEMSELVES AND FOR THE EXTRA WORK NEEDED TO OPERATE THEM

By DR. ARTHUR J. PRATT,

New York State College of Agriculture, Ithaca, New York

(This article prepared especially for "THE COMMERCIAL VEGETABLE GROWER")

IN these days of big investments in agriculture, irrigation is a form of crop insurance that few farmers can afford to be without. Irrigation gives smart operators one more chance to get ahead of their less adventuresome competitors. First we learned to control the weeds, then the insects and diseases, and now it's the elements.

Even the so-called "humid east" has its drought hazards as 1952 has proven to us again. In this humid east, most people think of irrigation as being necessary or profitable only in the drought years, such as those of 1934, 1936, 1939, 1943, 1949, and 1952. In other words, 6 years in the last 20 have been "disaster years" for thousands of farmers. If only used to prevent those disasters alone, irrigation systems would pay for themselves and for the extra work needed to operate them.

But dry weather is the limiting factor in crop production much more often than that. Summer rains in the humid regions of the United States come mostly in the form of showers and thunder-showers. These storms are very local in nature and can be predicted only in a general way. Nor is their pattern predictable!

Irregularity of Rainfall

Near Ithaca, New York, 3 standard 8-inch gauges were out in fields during the storm on July 3 and 9, 1952. One was in a central location, one was 2 air-line miles east of the center, and another was 1½ miles southwest of the center. 3.29 inches of water fell in the rain gauge at the central location, 3.99 in the one to the southwest, and 4.97 inches in the one to the east. This, of course, is not unusual. Many farmers have

seen their neighbor's hay get wet and not their own, or vice versa. It is rather unusual that we have a difference between a hard rain and no rain on adjacent farms, but in practically every shower large and small there is a difference between the quantity of rain that falls on one farm and that which falls on one near-by.

Long-time residents of a community sometimes get the notion that these showers travel in certain patterns. This is only partially true. In northeastern United States the showers generally travel from west to east, but just about the time that someone has it figured out that these showers follow a certain path, then that path seems to change—not the direction of the storm travel but the areas that are hit.

Another common situation in which irrigation is profitable occurs in years and locations where the total rainfall is adequate for each month of the growing season and yet there may be a period of dry weather lasting as much as 3 or 4 weeks. Such a period is likely to greatly limit the yield of many or most crops. It is not unusual that such a dry spell will be broken by so heavy a rain that it will bring the figures on the total rainfall for the month up to normal. The rate of rainfall in such showers, however, is frequently so great that much of it is lost in runoff, and even if most of it were absorbed by the soil, it would not be likely to do the crops as much good as a more even moisture supply.

Plant Water Needs Are Great

Transpiration through the leaves and evaporation from the soil surface are likely to use up several tons of water to produce a bushel of potatoes, tomatoes, or similar crops. In other words, most any crop that covers or nearly covers the ground on July 1 can be expected to use from 10-15 inches of water during July and August. The exact amount depends on the temperature, humidity, wind movement, and the amount of sunshine during that period.

The normal rainfall in Ithaca, N. Y., during the months of July and August is less than 7 inches, but it has varied from 4 to 15 inches within the past 25 years during that period. This indicates that the normal or average year is too dry and that only rarely is the rainfall adequate for an entire season. Over a period of years the rainfall for Ithaca in July and August is about the same as that for many other locations in northeastern United States. Of course there is a big variation between these locations in any one storm period, or even in certain entire seasons.

When Water Is Most Needed

There are two times in the life of a crop when adequate water supply is especially important. The first is when the plants are just starting, either germinating from seed or when freshly transplanted to the field. While water is extremely important at this time to insure the life of the crop, the demands for water are not large. At this time the root systems of the crops are very limited and the moisture must be where the plant can get it.

The other time of maximum need is when the plants have covered the ground, or nearly so, and they are producing dry matter at a rapid rate. From 300 to 1,000 lbs. of water is usually evaporated through the leaves of a plant in producing one pound of dry material. As one grower put it, when an acre of cabbage is increasing in yield at the rate of ½ ton per day, the water that is evaporated from those plants would make a fair-sized stream.

Water Increases Yield and Quality

In the arid sections of the country crop production is impossible without irrigation, but in the humid sections we have taken our chances on the

Photo from The Gorman-Rupp Co.

Irrigation pumping unit in operation on Louis Bromfield's famous Malabar Farm, Lucas, Ohio.

weather. Experimental evidence from sections of the east and midwest indicates that we can no longer afford to do that. Irrigation of potatoes in western upstate New York has been profitable every one of the past 14 years. A well replicated test plot in Allegany County in 1951 showed a 75 per cent increase in the yield of U.S. No. 1 potatoes due to irrigation. Not only was irrigation responsible for the big increase in yield, but the potatoes that were not irrigated were all so close to the minimum size for No. 1 potatoes that they would not have been saleable in a normal season.

Irrigation improves the quality as well as increasing the yield. In the case of leafy vegetables this is particularly noticeable. Tomatoes develop less blossom end rot when they are properly irrigated. Leafy vegetables are more succulent and tender when grown rapidly with plenty of water than when grown under dry weather conditions.

A grower in Florida bought irrigation equipment to use on his tobacco and his pasture. This worked so well that he set up a big sprinkler in the center of a 10 acre field of watermelons. The entire field received the same treatment as far as cultivation and fertilization were concerned, but the two acres in the center that got the man-made rain produced melons averaging 15 lbs. heavier than those from the rest of the field, and they were ready for market two weeks earlier. Potatoes and certain other crops will mature earlier under irrigation if the dry spell occurs early in the season.

Yields

To check the yield increases that might be expected in various parts of New York State, experimenters in the Dept. of Vegetable Crops at Cornell set up a number of test plots in cooperation with County 4-H Club agents and 4-H Club members. These have been carried on for a period of four years and in 14 different counties in upstate New York. Much of this work has been done with potatoes as it is a crop that is easy to measure, and it is a crop with an extensive root system which should be able to get water for itself if there is any available in the soil. Crops with a more limited root system such as spinach, lettuce, and onions would be expected to give much greater responses.

The increases in potato yields due to irrigation have been large and significant. Five times in the past three years and in 15 tests there has been an increase of more than 100 bushels per acre of #1 potatoes; 4 times the increases were between 50 and 100 bushels, and in the other 6 trials the increases were less than 50 bushels per acre of #1 potatoes.

Those tests also showed that potato growers can expect an increase in the number of tubers set by each plant as well as an increase in the total yield.

TABLE

Effect of irrigation on yield of potatoes, bushels per acre of tubers over two inches:

Year	Number of places tested	Irrigated	Not Irrigated	Increase due to Irrigation
1949	5 counties	510	416	94
1950	4 counties	456	376	80
1951	6 counties	392	354	38

When to Irrigate

There has been nothing less scientific about sprinkler irrigation than the problem of deciding when and how much to irrigate. Most growers merely feel of the soil, look at their crops and guess whether or not to irrigate. With plenty of experience, that might not be too bad.

Elaborate formulae and charts have been developed to make the guessing more accurate. These are based on temperature, humidity, wind movement, and sunshine. Other investigators have concluded that a vigorously growing crop uses approximately eight tenths as much water as will evaporate from a standard Weather Bureau evaporation pan. However, since water use by the plants depends much on the size of the crop at the time, a way of measuring the moisture in the soil would seem to be best.

Some devices have been developed for this purpose. One of these is tensiometer, a porous clay cup with a tension measuring device such as a vacuum gauge or a column of mercury. Tensiometers are accurate but expensive, clumsy, and require frequent attention. They will measure the moisture at the higher ranges.

Another group of moisture devices includes electrodes that are covered with plaster of Paris, nylon, or fiber glass. These are buried in the soil and insulated lead wires extend from the electrodes to a few inches or more above the surface of the ground. The moisture content of the soil in the vicinity of the electrode is checked by attaching a moisture detecting meter to the lead wires and sending a current of electricity thru the blocks from a small dry cell battery. These meters can be calibrated to give readings that are roughly in terms of the percentage of available moisture in the soil. The readings are only approximate, but it probably makes little difference whether irrigation is started at the time that the available moisture is reduced to the 30 or the 40 percent level. It is likely to make a difference, however, whether the irrigation is done at the 50 or at the 5 percent level.

To get maximum crop growth irrigation should be done before the lack of water has slowed the plant growth. Probably the time to start irrigating is when the available moisture in the soil is between the 25 and 50 percent levels.

Of course one should have one eye on the weather map and the other on the moisture meter, but if only local showers are predicted the grower should go right ahead with his irrigation, and keep on irrigating until the water that he has applied, or the rainfall, or both, have added the desired amount of water. With most soils this is from ¾ to 1¼ inches.

Irrigation on a Hot, Sunny Day

The question is often raised, "Is it safe to irrigate when the sun is shining or should it be done in the evening or at night?" The answer is simple. The irrigation water is usually cooler than the air on a hot day. Also there will be some evaporation of the irrigation water and that will further cool the air and the plants. The effect is likely to be as beneficial as a local shower. The author watched crops being irrigated during the hottest, driest, and sunniest days of 1952. The only crops that showed any sunscald were the ones that did not get irrigated.

The conclusion is that probably it is best to irrigate when the sun is shining. That certainly is true from the standpoint of many foliage diseases, such as late blight of potatoes and tomatoes. There is less danger of spreading those diseases if the plants are allowed to dry off in the morning before irrigation is started. Also, if convenient, it would be safest to stop irrigation early enough in the afternoon so that the plants would have a chance to dry off before the evening dew started to form. The shorter the wetting period, the less is the danger of spreading foliage diseases.

Effect on Soil Structure

In some areas where the soil organic matter content is very low, irrigation has been criticized because of the possibility that it may help to further break down the soil structure. The soil responds in the same way to a big drop of water from an irrigation system that it would to a big drop of rain. **The only difference is that no one needs to put up with big drops from the irrigation system.** The size of drops depends upon the equipment and upon the water pressure. Big irrigation nozzles are perhaps the worst offenders, but with any piece of irrigation equipment, the drops are largest at low pressures and smallest at high pressures.

Irrigation in a dry season favors the development of soil bacteria and earth worms. These break down the soil organic matter so that it is more useful to the plants. This is no different than what happens in a good growing season when the rainfall is adequate. In either case, the organic matter must be replaced to maintain a good soil structure, unless the new soil conditioners prove capable of doing this. Irrigation provides one more chance for the smart operator to get farther ahead of his less adventuresome competitors.

Soil structure can be damaged, of course, by unnecessarily tramping around while the ground is wet from irrigation, the same as when it gets wet from rain. It usually is necessary to get on the wet ground to move the irrigation pipe, but tramping from pipe moving can be kept to a minimum with a little thought and care. The tractor tow and wheel move systems should get consideration from this standpoint as well as from the labor saving standpoint.

The successful use of each modern device or method requires more thought and more

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careful attention than the old-fashioned way. A tractor is likely to do more damage to the soil structure than a horse, and commercial fertilizer will hasten bacterial growth and the breakdown of soil organic matter as compared to no fertilizer, but instead of throwing away these modern aids, we learn how to make them work for us effectively. While to a few, irrigation will mean a quicker breakdown of the soil organic matter and hence of the soil structure, to others it will mean that the cultivated crop can be removed more quickly so that there will be more time to grow a soil improving crop.

The Cost of Irrigation Equipment

Costs vary a great deal from one type of equipment to another. It may not take much equipment or power to irrigate a field that parallels a stream, but most of the irrigation layouts are not that simple. It may be necessary to drill a well or to build a farm pond to get an adequate source of water. Unless a grower is absolutely sure of his conditions he should call in the soil conservationists, the county agricultural agent, and the agricultural or irrigation engineer.

Farm ponds in the east, and on a large scale, are one of the most recent developments to provide water. They are excellent in areas where the soil type is such that it can be made to hold water from the spring run-off of melting snow and rain. Plans should be made to make sure that the pond is large enough to do the job expected of it. A million gallon pond would be adequate only to put 4 inches of water on 5 acres, assuming that approximately ½ of the water would be useable for this purpose and the balance lost to evaporation during the season. Of course, much more could be expected from a spring-fed pond that was being constantly restocked. Farm ponds also serve as fire protection, as a source of water for livestock, and for swimming, boating, and fishing.

Wells are likely to be adequate for irrigation only in certain areas. State geologists and irrigation engineers have a surprising amount of information about wells, and should be called upon before any investment is made.

The original cost of equipment is likely to be in the neighborhood of $100 an acre. Because of this heavy investment irrigation engineers and salesmen should be consulted before any decision is made on the type to purchase.

Recently the development of light weight aluminum pipe has made the job of moving irrigation pipe easier. Unless it is a matter of picking up some used pipe at a bargain, no one considers the use of steel pipe anymore. The figures on the increase in the sale of extruded aluminum pipe tell this story: In 1946, 1,000,000 lbs. of extruded aluminum pipe was sold for irrigation purposes. Four years later 19,000,000 lbs. was sold for irrigation.

Irrigation — A Way To Control the Elements

In the 5 year period between 1944 and 49, there was an increase of approximately 100% in the acres of land irrigated in northeastern United States. This in itself is a very good barometer of what the growers themselves think of the importance of irrigation.

A potato grower in western New York put $100,000 in seed and fertilizer last spring. His area has been hit hard by drought this season. He was not prepared to irrigate much of his acreage and will have to take a low yield. The way the weather has turned out, there is no question but what he was "playing with matches in the hay mow when he had no fire insurance."

In many sections of the "humid east" irrigation will save a crop from almost complete failure 1 year in 5. In about 3 of the other years it is likely to show a good profit and in an occasional year it may not be needed. The odds against you are much greater if you try to grow crops without "rain insurance" than if you let your house go without fire insurance. Hence it would seem that irrigation is a form of yield and quality that no good grower can afford to be without.

ACREAGE IRRIGATED BY SPRINKLER SYSTEMS IN 15 LEADING STATES

STATE	ACRES	STATE	ACRES
California	231,828	Idaho	9,995
Oregon	98,769	Nebraska	8,295
Florida	80,091	Colorado	8,194
Washington	67,852	Connecticut	7,669
Texas	41,508	Wisconsin	7,492
New Jersey	19,058	Massachusetts	6,706
New York	16,361		
Montana	15,520	Total acreage Irrigated by Sprinkler systems	630,912
Michigan	11,894		

(1950 Census of Agriculture Statistics)

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COMING EVENTS

Feb. 24-26—Northwest Farm Managers Association. Fargo, N. Dakota.

March 1, 2, 3 and 4, 1953—National Association of Frozen Food Packers, Chicago. Association headquarters: Room 402, 1415 K street N. W., Washington 5, D. C.

March 12, 13 and 14, 1953—Watermelon Growers and Distributors Association, Hotel George Washington, Jacksonville, Fla. Association headquarters: J. J. Parrish, secretary-treasurer, Adel, Ga.

March 23 and 24, 1953—Kern County Potato Growers Association, Bakersfield, Calif., Association headquarters: 1410 Truxtun avenue, Bakersfield; Don Maupin, executive secretary.

Sept. 23, 24 and 25, 1953—The Florida Fruit and Vegetable Association, Casablanca hotel, Miami Beach. Association headquarters: 2401 East Colonial Drive, Orlando, Fla.

Oct. 4, 1953—Third Annual Natl. Convention, Produce Prepackaging Assn., Chase Hotel, St. Louis, Mo. Week-long Conv.

Secretaries of vegetable groups — local, state, regional, etc — are urged to send CVG dates, details, programs, etc. of meetings, conventions, field days and coming events for this column and news columns.

Vegetable Growers' Association To Hold Organization Meeting

Temporary officers and directors of the Maine Vegetable Growers' Association will hold an organization meeting February 5 in Hallowell.

Winfield Prout, temporary president, says he hopes that the Association will include representatives of the various vegetable growing areas of Maine, as well as of the various vegetable crops. These crops representatives would include fresh vegetable growers, potato growers, processing crops producers, small fruit growers, dry bean growers, and others. Presumably the new Maine Association will be affiliated with the Vegetable Growers Association of America.

Representing the Extension Service and the University of Maine at the meeting will be Robert Paulson and Paul M. Bessey, instructor in horticulture. They have been instrumental in helping organize the new association.

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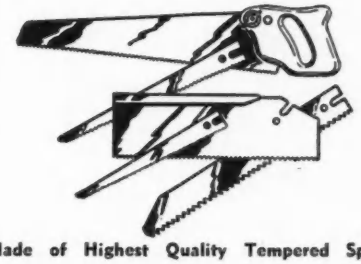

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Technical Briefs

How To Identify and Combat Turnip Aphids and Plant Lice

Turnip aphids or plant lice are abundant and cause damage to turnips, mustard, radishes and related crops, advises L.S.U. Agri. Ext. Serv. These insects are soft, small and greenish in appearance with the small young lice being lighter in color.

Aphids are usually found in the buds of the plants and on the undersides of leaves, where they cluster in great numbers. These insects develop very rapidly and they may do serious injury in a very short time, especially on young plants that have just come up. At this stage stands are frequently ruined. Rain and cool weather is favorable for the development of this pest. Hot, dry weather is unfavorable for its development.

"Treat all infested crops thoroughly with 1 percent rotenone dust and repeat at 10-day intervals as long as aphids are present. Crops that are just coming up should be treated immediately, since they are almost certain to be damaged by this pest. Those who do not have dusters, but who have sprayers can use 2 pounds of derris or cube containing 4 to 5 percent of rotenone in 50 gallons of water, applied at the rate of 100 to 125 gallons per acre. Dusting is preferable to spraying.

What Happens To Squash Blossoms?

The large number of blossoms and the small number of fruits that set on squash vines is evidently a matter of concern to many squash growers in the light of the inquiries coming to the vegetable crops specialists at the Experiment Station at Geneva.

Actually, the abundance of blossoms on squash vines and on related cucurbits, such as summer squash, melons, and cucumbers, is a provision of nature to insure pollination when it is needed, explain the Station scientists. A set of two or three fruits to a vine is said to be a normal squash yield.

"The squash plant produces a large number of blossoms, most of which are male or pollen-producing blossoms while others are female or fruit-producing blossoms," continue the Station workers. "The ratio of male to female blossoms may be as high as 10 or even 20 to 1, and in addition only a small percentage of the female blossoms develop into normal fruits. There must be an abundance of male blossoms available at all times, however, to insure a supply of pollen when the female blossoms open and are ready for pollination."

The two kinds of blossoms are identified by the tiny embryo fruits that are a part of the female flowers. The male flowers do not have these small squashes and generally open early in the morning and then dry up and fall off. In the case of female blossoms, those which are not pollinated turn brown and decay.

"This is an entirely normal situation, and if you are getting two or three fruits at a time, you are getting a normal yield," conclude the Station scientists.

Powdered Potatoes Save Shipping and Storage Space

"Potato granules" may have the same effect on the potato industry—and the housewife—as frozen orange juice concentrate has had on the citrus industry.

The British have been using dried powdered spuds for several years, and the U. S. Army has used the product extensively since the start of the Korean War. It has also been on the domestic market for about two years in limited quantities.

Less than a gallon, a standard No. 10 can of potato granules, with hot water added, will make 100 servings of mashed potatoes, or about 30 pounds. The reduction in shipping and storage bulk has been a boon to the Army. The potato concentrate is expected to be in demand by hospitals and other institutions where large-scale feeding is carried on. Later, it will be available to homemakers.

A new method of grading potatoes into "bakers, boilers, and fryers," based on their dry-matter content, has been developed recently at Colorado A. & M. College. The measurement of dry-matter in potatoes can indicate their grade and cooking quality. A mechanical separator can handle six tons of potatoes per hour, whereas, previously grading potatoes according to their dry-matter content could only be done in the laboratory.

Seaweed Is Good Fertilizer

Seaweed harvested from the ocean could mean greater harvests for farmers and gardeners. Dr. V. J. Chapman, British authority on seaweeds and their uses, says that one ton of wet seaweed contains as much organic plant food as two tons of the best barnyard manure. In addition, Dr. Chapman reported that seaweed puts into the soil all of the important trace minerals, plus enough iodine to make the vegetables fed by seaweed effective against goiter, the iodine-deficiency glandular disease.

Root-Dip Treatment

(Continued from Page 9)

supporting more top growth.

Possible Practical Application

The significance of these findings lies in the possible use of the root-dip treatment by farmers as a benefit to transplanted crops. The deposit of fungicide on the roots of transplanted vegetable and nursery stock, often in weakened condition following replanting, may protect them against certain root pathogens. Furthermore, induced rooting as a result of the root-dip treatment may stimulate the plant to a better start in the greenhouse or field. It is believed that the treatment can appreciably reduce losses of replanted stock.

Additional work is in progress to determine the optimum concentrations of chemicals as root dips. Tests are being conducted to ascertain whether the beneficial response of plants in sand also occurs on root-dipped plants replanted in soil.

WHERE DO WE GO FROM HERE?

(Continued from Page 3)

to an outstanding degree non-fattening as well as marvelous substitutes for bran, etc. There may be women who are not concerned with retaining that boyish figure, but they would probably not be easy to find. And practically every mature male person is concerned about that "spare tire" that may develop around his midriff, and is warned by his insurance company and his doctor that he must lose weight if he is to avoid all kinds of degenerative diseases—especially high blood pressure and heart trouble. With the greatly increased consumption of highly concentrated foods like meat, eggs, butter, cheese, and other high protein foods, which is part of our high standard of living, it would seem both essential and desirable for most of us that bulky foods, such as fruits and vegetables, be used liberally if the normal functions of the human body are to be carried out. It is common knowledge that tremendous quantities of laxative preparations are sold annually. It is interesting to speculate on what might happen if consumers were even moderately well informed concerning the mildly-laxative physiological result of eating large quantities of luscious fresh fruits and vegetables. Why not tell them about it, in words of one syllable?

Convenience May Be Key to Success

One of the merchandising marvels of the midcentury is the self-service super market, with its tremendous stock of supplies of all kinds of goods—foods and otherwise. In his remarkable "March of Progress" issue of The Progressive Grocer in October, 1952, Carl Dipman points out that a good sized super market may have over 3500 different items on its shelves. Like all new developments, however, the super market has its weaknesses as well as its advantages. One of the greatest disadvantages is the lack of salesmanship. The customer has, it is true, absolutely free choice as to what she shall buy, limited only by the contents of her purse. But, by the same token, each commodity, each single fruit and vegetable must now literally sell itself to Mrs. Consumer. And it must sell itself not only on the basis of appearance but on the basis of convenience as well. Milady of 1953 is far too busy to spend much time picking up, weighing, and packaging produce. She expects to find practically all fruits and vegetables either packaged or put up in sales units best suited to her family needs, which she can readily inspect, quickly grasp and go on her way. Just what this means for the future in the way of prepackaging fruits and vegetables at country points, in city wholesalers' warehouses, or in the retail stores themselves is hard to forecast with any degree of accuracy. There can be little doubt, however, that Milady likes the self-service super market. How far she can and will go in the way of paying a little extra to be able to pick up an attractively packaged product is still an unknown question, varying with the product, with the level of family incomes and a host of other factors. It seems fairly clear, however, that a substantial number of vegetables and of fruits are likely to join the prepackaged ranks during the next decade or so — merely getting in line with the predominantly prepackaged grocery, dairy, and meat products. It is equally clear that such a program will call for experimentation on a wide scale by all elements in the produce trade, and for a large amount of intensive cooperation on the part of package manufacturers with growers, wholesalers, jobbers and retailers.

Federal Supported Flood Control Organization Urged

IRRIGATION OFFICERS—James L. Doyle, (center), Fort Collins, newly elected president of the Four States Irrigation Council, looks over plans for the council's 1953 activities with other newly elected officers after the closing session of the group at Colorado A & M College. With Doyle, the superintendent of the Larimer and Weld Irrigation Company in Fort Collins, are Breck Moran, (left), Cody, Wyo., undersecretary of treasury, and Perry L. Sweat, Smith Center, Kansas. Doyle succeeds E. O. Baggett, Scottsbluff, Nebr. as head of a group which embraces the four-state area of Colorado, Wyoming, Nebraska and Kansas. The three also will act as directors, along with Avery A. Batson, of the Denver Bureau of Reclamation, and Galen Lowry of Gering, Nebraska.

CREATION of a cooperative flood control organization, supported by federal, state and county governments to offset increasing flood damages was urged at the annual meeting of the Four States Irrigation Council at Colorado A & M College, Jan. 14 and 15.

Chester Nelson, Gering, Nebr., district manager of the council, advanced the suggestion at the group's opening session Wednesday which attracted nearly 100 irrigation representatives from the four-state area of Colorado, Wyoming, Kansas and Nebraska. Nelson reminded his listeners:

"It would be much better to use some foresight and establish flood control measures in the first place in order to prevent or minimize the damage from floods."

The veteran soil conservation expert maintained the nation's farmers are interested "only in the thorough drainage of their land due to extensive cultivation of irrigated land."

"Therefore," he continued, "any small or large water holes that retained some of the flood waters have been drained through the shortest course possible to the drain ditch or irrigation canals."

Nelson insisted that the problem was such that "no one organization can handle it," he added:

"It is a problem that must be handled and led by a flood control organization supported by the federal, state and county governments . . . with enacted laws and competent personnel.

"The irrigation districts, of course, do not have direct control of such practices," Nelson recalled, "but with encouragement to land owners and tenants by irrigation and flood control officials, some of these things can and will become a reality."

MARKET REPORT –

POTATOES and ONIONS

(*Prepared by* CVG COMMODITY MARKET ANALYST)—January 30, 1953

WESTERN AND NORTHERN (Red River Valley) potato stock ranges from full steady to firm and higher. Cold weather which prevailed throughout the shipping district, recently, was slowing up loading, and growers disposed of stocks slowly.

CHICAGO potato market has been firm despite heavy shipments. Indications were that good percentage of shipments were going direct from shipping point to interior markets. Prices have held firm despite of heavy movements.

NEW YORK market was steady during Mid-January.

ST. LOUIS jobbing market held firm, although some carlot prices were slightly easing.

It appears that the potato grower is going to have to merchandise his supply more than he has been doing during the past few months. We are in a buyers market at the present and it will take some time before the bearish sentiment of the wholesale trade will change.

USDA REPORTS placed the total merchantable stocks held by potato growers in 29 late states at 113,145,000 bushels as of Jan. 1, 1953 vs 93,550,000 on the same date last year.

Merchantable Stocks Held by Growers and Local Dealers on January 1st, 1953 with comparison In Import Producing Areas

(1,000 Bushels)

	January 1, 1953	January 1, 1952
Maine	33,760	29,480
New York (Combined)	8,630	7,190
Pennsylvania	5,600	5,870
Minnesota	6,010	5,480
Idaho	19,010	14,040
Colorado	7,980	4,000
California	3,900	2,000
Total 29 Late States	113,145	93,550

CARLOT SHIPMENTS OF POTATOES (January 7th to January 15th). Maine 1,537, Minnesota 324, Nebraska 226, North Dakota 754, California 397, Colorado 418, Florida 47, Idaho 1,937, Oregon 307, Washington 65, Wisconsin 132, others 108. Total 6,252. Imports—Canada 144.

THE ONION MARKET has been strong. Jumbo sizes showed greatest strength. Heavy movements from Idaho, eastern Oregon and Colorado. Medium onion market also was strong. Fewer than 1,000 cars left in Idaho and eastern Oregon. Very few onions left on hand in Minnesota, Wisconsin and Iowa. Volume left in Michigan and New York. Government reports indicate there will not be large amounts coming out early, due to late planting. Weather so far has been good. The largest single acreage will be later than last year (Costal Bend section). Whole Texas crop could be delayed two weeks by any severe cold weather. Market in New York has registered as full steady.

ONION STOCK REPORTS by Bureau of Agricultural Economics are placed on a new basis: "Common Storage" by growers and dealers in the 19 Late Summer (storage crop) States. "Cold Storage" stocks in all States. Under the new plan of reporting, duplication is eliminated.

COMMON STORAGE stocks of onions held Jan. 1, 1953 by growers and dealers in the 19 Late Summer States totaled 6,007,000 (fifty-pound sacks). This is 11 percent less than the 6,780,000 in common storage on Jan. 1, 1952. The estimate is stocks of marketable quality. Shrinkage allowances, waste and other losses, have not been made.

COLD STORAGE HOLDINGS in all states, January 1, 1953 reported as 61,161,000 pounds (1,223,000, equivalent sacks). January, 1952 report 69,432,000 pounds (1,389,000 equivalent sacks.)

INDICATED TOTAL STOCKS in both common and cold storages of onions, Jan. 1, 1953 7,230,000 sacks. 11 percent less than Jan. 1, 1952 report of 8,169,000 sacks.

EASTERN AREAS (in both common and cold storage), 16 percent below Jan. 1, 1952; **CENTRAL,** 19 percent below; 1 percent in **WESTERN.**
19 Late Summer States, shrinkage and waste to Jan. 1, smallest since 1943.

CARLOT SHIPMENTS, ONIONS (January 7 to January 15), Oregon 213, Colorado 48, Idaho 132, Iowa 19, Michigan 46, Minnesota 73, New York 48, others 36. Total 615.

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Name ..... **Town** .....

Street .....**R. R.**..... **Box**..... **State**.....

Kind of Crops Grown .....

Acreage.....**Use Irrigation: Yes** ☐ **No** ☐ **Operate own packing shed: Yes** ☐ **No** ☐

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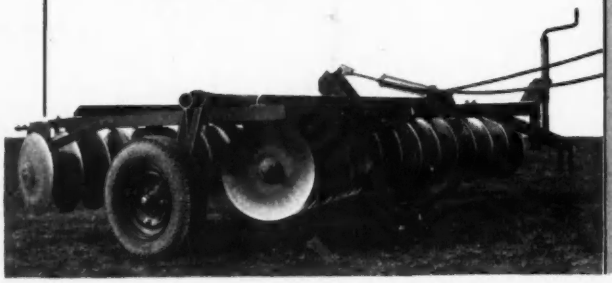

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